essence™

HDACC

High Def Audio Control Center

Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

TRADEMARK ACKNOWLEDGMENTS

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1. INTRODUCTION

The High Def Audio Control Center is designed to allow multiple audio sources to be controlled, switched and output to a variety of audio equipment. With its 6 audio inputs (including an HDMI input) and 6 audio outputs (including a 6.3mm headphone output) you can integrate and convert any digital or analog audio source to any type of amplifier or active speakers.

This device has an built-in sampling rate converter which can upscale audio signals between 44.1 kHz to 192 kHz (24-bit). With HDMI connectivity, it allows the user to embed or de-embed audio within the HDMI signal path.

For professionals, the Ti TPA6120A2 headphone amplifier, XLR (Low-noise Professional Balanced output) and 6.3mm headphone jack (3.5 mini-jack adaptor supplied) offer unparalleled audio quality. With a highly accurate PLL and low jitter reduction clock system, and with an OLED display and IR remote for controlling the device the HD Audio Center is an incredibly useful tool for getting the most out of your audio devices.

2. APPLICATIONS

- Multiple input/output Audio Center
- Audio format and sampling rate conversion
- Professional audio system integration with XLR balanced outputs
- Mac/PC USB audio output support
- Analog to digital or digital to analog audio conversion
- HDMI audio embedding or de-embedding

3. PACKAGE CONTENTS

- 1×HDACC
- 1×Remote Control (with battery)
- 1×6.3mm to 3.5mm Headphone Adaptor
- 1×Software CD
- 1×5 V/3 A DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

Input source equipment such as PC (USB) or DVD player with relevant connection cables and output to amplifier, active speakers or headphones

5. FEATURES

Main

- HDMI v1.3 Deep Color, HDCP Compliant, and Uncompressed LPCM 2.0 (24/96K) Audio
- Supports HDMI 3D formats: Framing Packing, Side-by-Side (half), Top-and-Bottom
- 6 Input, 6 Output HD Audio Control Center
- 4 Digital Inputs, 2 Analog Inputs
- 3 Digital Outputs, 2 Analog Outputs and Headphone Output
- Full system control from IR remote or main control dial via OLED display.

Digital

- HDMI, USB, Optical and Coaxial digital audio inputs support LPCM stereo
- HDMI input supports LPCM stereo in all modes but can pass surround sound signal whilst in bypass mode
- All digital inputs support 192kHz sampling rate at up to 24-bit resolution
- HDMI, Optical and Coaxial digital outputs
- All digital inputs can be SRC (Sample Rate Conversion) to 44.1, 48, 88.2, 96, 176.4 and 192 kHz via DSP Engine (Digital Signal Processing)
- Highly accurate PLL and low jitter reduction clock system
- HDMI Audio output (video is always bypassed to HDMI output) can either output the incoming HDMI (HDMI Bypass Mode) or embed the selected audio signal (HDMI Input Mode)

Analog

- Built-in Ti TPA6120A2 high quality headphone amplifier output
- Professional XLR balanced stereo output
- RCA analog stereo output
- RCA analog stereo input

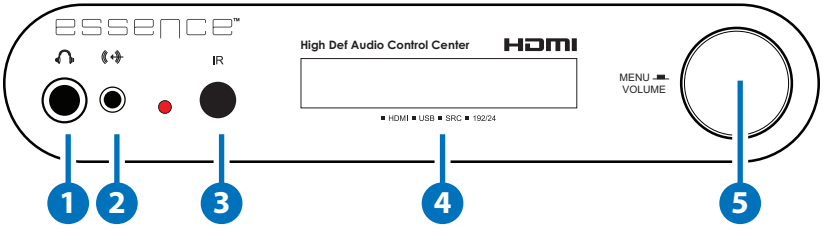
- Mini-jack (3.5mm) stereo input
- Total Harmonic Distortion (THD): Less than 100dB (-20dBFS)
- Analog inputs provide digital output sampling rates up to 192 kHz

Misc

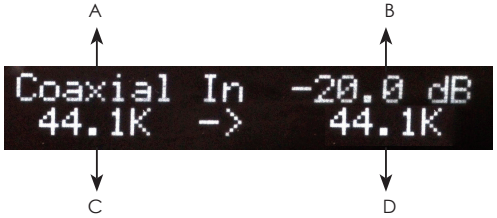
- IR Remote with direct source, power and mute buttons
- HDMI audio embedding or de-embedding
- Volume control of analog and headphone outputs or just headphone output via remote or main control dial
- Direct power and mute button on unit
- High viewing angle OLED display
- Headphone output fades in after system is muted
- 6.3mm headphone output (3.5mm mini-jack adaptor supplied)

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1. **6.3mm Headphone Output**: Connect to 6.3mm professional headphone set for user to enjoy the individual professional audio sound.
2. **3.5mm Line-level Input**: Connect 3.5mm mini-jack cable to any audio equipment for stereo input audio signal.
3. **IR:** IR receiver window. Accepts the IR signal from the supplied remote control.
4. **OLED:** Displays the input/output selection, volume setting, sampling rate and audio channels.

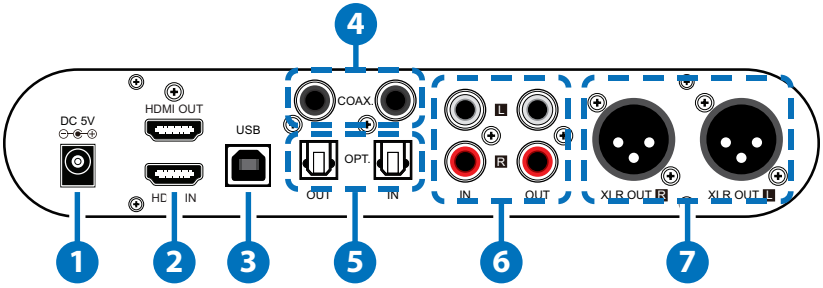


A. Input source
B. Headphone or analog line level volume or system mute
C. Input sampling rate
D. Output sampling rate

5. **MENU/VOLUME Controller:** Turn to adjust the volume. Press inwards to enter into the menu and turn it to select the desire setting, press again to confirm the selection.

   Note: The Volume and Mute functions only affect the headphone and analog line-out volume levels, all other outputs are not affected.

6.2 Rear Panel



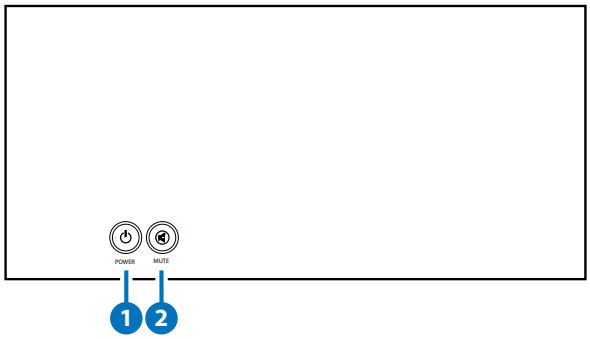
1. **DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.
2. **HDMI IN/OUT:** Connect to an HDMI source such as a satellite box or DVD Audio player and output to an HDMI HDTV/AV Receiver for display output.
3. **USB:** Connect to a PC/MAC source for USB audio signal input.
4. **COAX OUT/IN:** Connect the COAX IN to a coaxial digital audio input source such as set-top box or CD player and the COAX OUT to an amplifier or active speakers with a coaxial cable.
5. **OPT. OUT/IN:** Connect the OPT. IN to an optical digital audio input source such as a DVD/CD player or PS3 and the OPT. OUT to an amplifier or active speakers with an optical cable.
6. **L/R IN/OUT:** Connect the L/R IN to an analog stereo input source such as a CD player or media player and the L/R OUT to amplifier or active speakers with RCA jack cables.
7. **XLR L/R OUT:** Connect to an amplifier with balanced XLR inputs or directly to professional balanced equipment with XLR cables.

Note:

HDMI Input Mode: In this mode, whatever audio input is selected will be routed to the HDMI output as well as all other outputs.

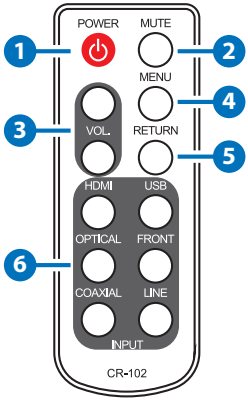
HDMI Bypass Mode: In this mode HDMI video and audio will always be routed to the HDMI output no matter what input is selected, whilst all other outputs will output the audio from the selected input. This function allows the user to have two distinct audio pathways through the unit.

6.3 Top Panel



1. **POWER:** Press this button to switch on the device or set to standby mode.
2. **MUTE:** Press this button to mute or unmute the audio volume instantly.

6.4 Remote Control



1. **POWER:** Press the button to turn On or to set the device to standby mode.
2. **MUTE:** Press the button to mute or unmute the audio volume instantly.
3. **VOL:** Press these buttons to turn up or down on the output audio volume.
4. **MENU:** Press the button to enter into the menu selections then press the volume up/down buttons to select and press it again to confirm the selection.
5. **RETURN:** Press the button to return or exit the menu selection.
6. **INPUT:** Press these hot keys to switch the input sources instantly.

6.5 OLED Menu

1ST LAYER	FULL NAME	2ND LAYER
Source In	Source Selection	**HDMI In**
		USB In
		Optical In
		Coaxial In
		Line In (L/R In)
		Front In
		Return
SRC Set	Sampling Rate Conversion Setup	**Bypass**
		192 kHz
		176.4 kHz
		96 kHz
		88.2 kHz
		48 kHz
		44.1 kHz
		Return
HDMI TX Set	HDMI Output Setup	**Bypass**
		Input
		Return
Display Set	Display Time Out Setup	**TimeOut 5s**
		TimeOut 10s
		TimeOut 15s
		Return
HP Impedance	Headphone Impedance	**16 Ω**
		32 Ω
		64 Ω
		200 Ω
		300 Ω
		600 Ω
		Return
Line Out Set	Headphone/Line Out Setup	**Fix Level**
		Volume Level
		Return
Reset to Default		**OK**
		Return
Return		

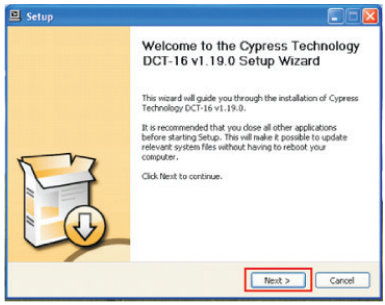
7. SOFTWARE INSTALLATION

7.1 Install Driver

- **Windows 7/Windows XP**

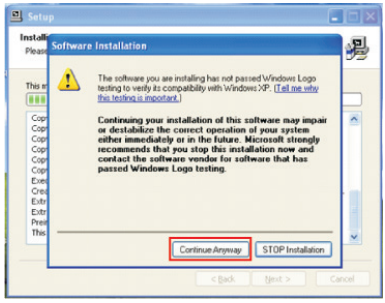
Insert the CD-ROM included in the package into your computer's CD-ROM drive. The setup wizard should automatically start. Connect the HDACC to the computer.

Click on 'Next' to start the setup.



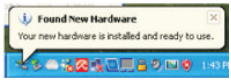
Confirm the location of the 'Destination Folder' (the default location will be shown) and click on 'Install' to continue the setup.

While the installation may proceed uninterrupted, a message may appear (example shown below). Click 'Continue Anyway' to continue the installation.



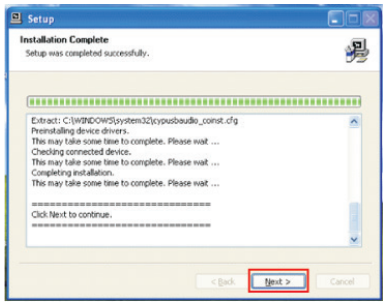
During the setup the unit must be connected to your PC/laptop source device. When the message appears to asking for the unit to be disconnected and reconnected, follow the onscreen prompts and when finished click on 'OK'.

The PC/Laptop should recognize the HDACC and a message will be shown in the system tray on the bottom right-hand side.

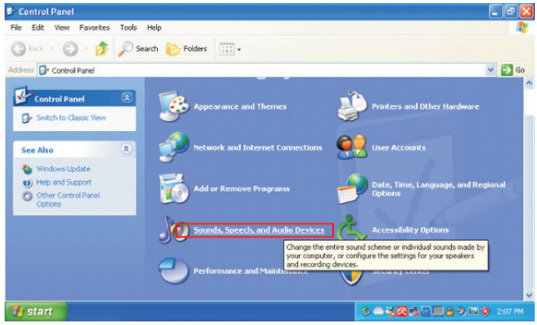


The installation will continue and a message of Windows Logo compatibility testing may appear click 'Continue Anyway' to continue the installation.

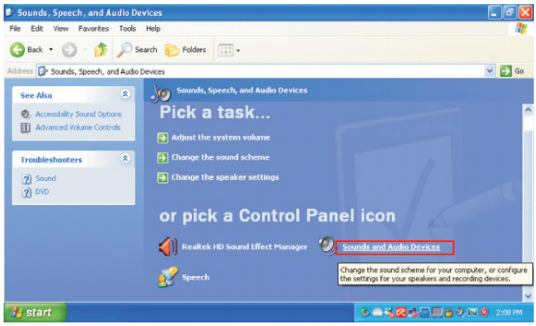
When the installation is complete click on 'Next'.



Go to the Control Panel from the 'Start Menu' and click on 'Sounds, Speech, and Audio Devices'.



Then click on 'Sound and Audio Devices'.



Select the 'Audio' tab and choose 'USB Audio 2.0 Output' from the Sound playback's Default device dropdown menu. Click 'OK' to start using HDACC.

- **Windows 8**

Part 1

Right click "setup.exe" file found in the CD-ROM.

Select "Trouble Compatibility".

Click "Try Recommended Settings".

Click "Test The Program".

Click "Setup Program Icon" on the Task Bar.

Click "Yes".

The message "This Setup cannot run on the current operating system" will pop-up.

Click "Enter", then click "Next" of "Program Compatibility Troubleshooter".

Click "Cancel" to quit part 1.

Part 2

Move the mouse cursor to the right up corner and click "Settings".

Click "Change PC settings".

Click "General", then click "Restart now" of "Advanced Startup".

Click "Troubleshoot" to bring up the "Choose An Option" window.

Click "Advanced Options".

Click "Startup Settings".

Click "Restart".

Press “7” to choose “Disable driver signature enforcement”.

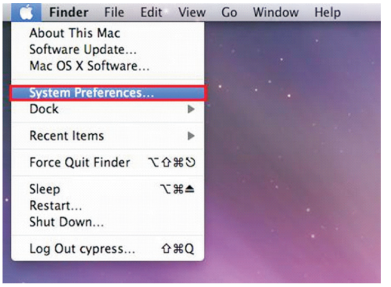
Execute “setup.exe” found in the CD-ROM to install driver when Win8 OS runs.

Select “Install this driver software anyway” when “Windows Security” is pop-up.

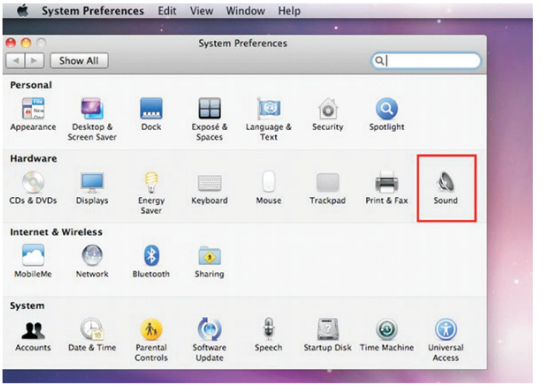
Restart Win8 OS after the driver is installed.

- **Mac OS**

There is no installation required for Mac OS computers, however, a simple setting change is required in order to allow the HDACC to function.



Click on 'System Preferences' and then click 'Sound' button.



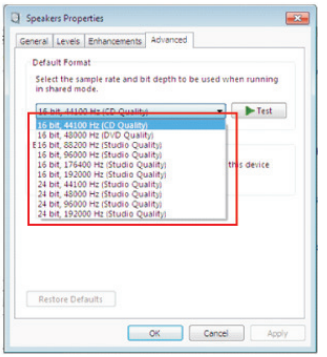
When the sound preferences appear, click on 'Output' and select 'USB'.

Note: *Please make sure the USB Audio is upgraded to version 2.0. If USB Audio driver is under 2.0 version some noise may occur.*

7.2 Select Sample Rates

- **Windows 7/Windows 8**

Sampling rate is only selectable in Windows 7 and Windows 8, while other Windows versions do not support this function. Since the output sound quality is dependent on the original source audio signal, performance may vary. Selecting the sampling rate may improve the sound available from your computer.



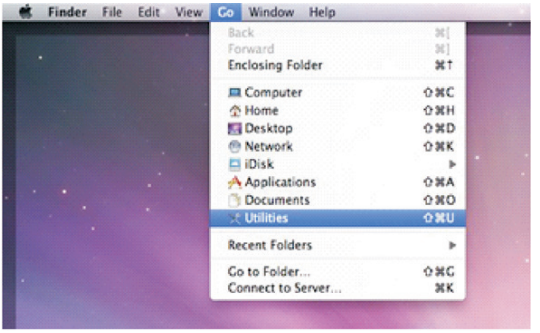
Start from Control Panel and click on 'Hardware and Sound'. Click on 'Playback' tab and select the device "USB Audio 2.0 Output" and click 'Properties' button.

Select the 'Advanced' tab and click on the dropdown menu next to 'Test' button and select the desired sampling rate. Click on 'OK' button to confirm the selection and the sampling rate selection is complete.

- **Mac OS**

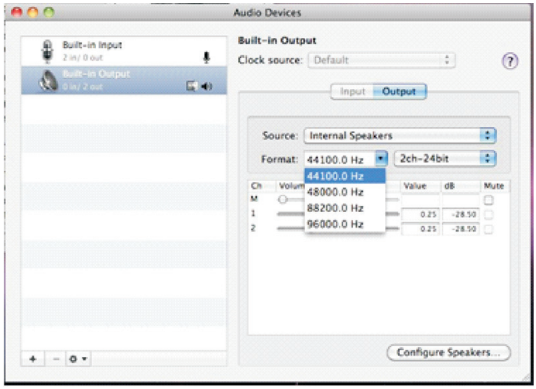
Sampling Rate is selectable in Mac OS. Since the output sound quality is dependent on the original source audio signal, performance may vary. Selecting the sampling rate may improve the sound available from your computer.

On the menu bar, click 'Go' and select 'Utilities'.



Click 'Applications' in the left pane, then double click the 'Audio MIDI Setup' in the right pane to launch the 'Audio Devices' screen.

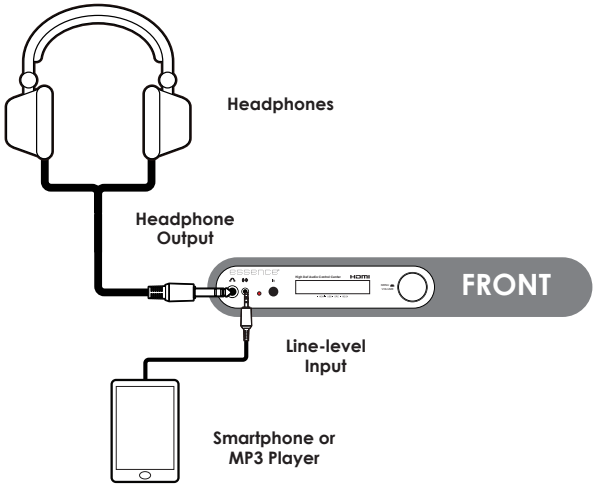
Click 'Built-in Output' in the left pane. Use the 'Format' dropdown menu to select the desired sampling rate, then click 'Configure Speakers' button to apply.

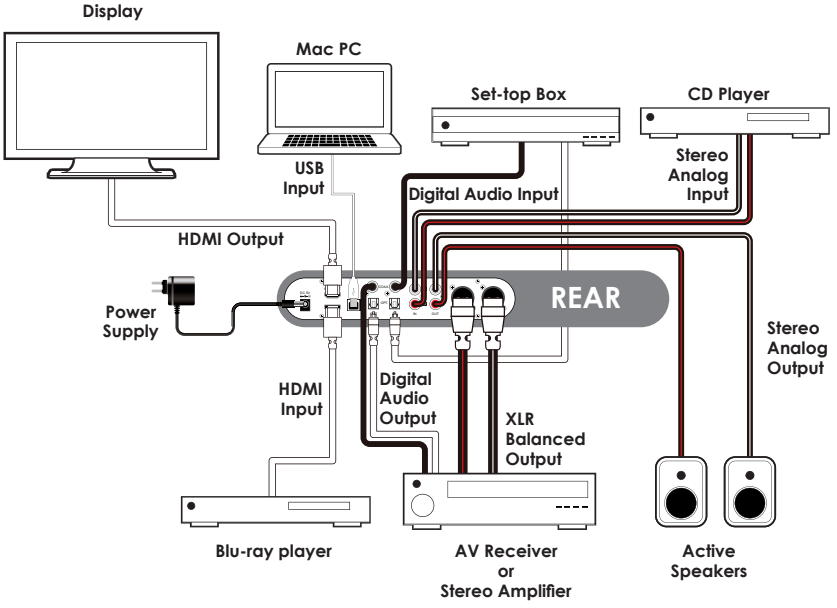


7.3 Uninstall Driver

1. Open the Control Panel from the 'START Menu' and 'then select 'Add or Remove Programs'.
2. Select 'USB Audio Driver' and click 'Remove'.
3. Click 'Yes' to confirm the removal and click 'Yes' again to restart the computer in order to remove the software completely.

8. CONNECTION DIAGRAM





9. SPECIFICATIONS

Input Ports	1×HDMI, 1×USB (Type B), 1×Coaxial, 1×Optical, 1×L/R (Analog Stereo 2RCA), 1×3.5mm Phone Jack (L/R)
Output Ports	1×HDMI, 1×Coaxial, 1×Optical, 1×L/R (Analog Stereo 2RCA), 1×XLR (Balanced Analog Stereo), 1×6.3mm Phone Jack (Headphone)
Digital Audio I/O Support	LPCM 2CH
Stereo Audio I/O Level	2 Vrms ±0.2
XLR Blanced I/O Level	4 Vrms ±0.2
Headphone Impedance	16 Ω ~ 600 Ω
Analog Line-Out Gain	0db to -80db
Headphone Output Gain	-0.5db to -91.5db
ESD Protection	Human body model: ±8 kV (air-gap discharge) ±6 kV(contact discharge)
Power Supply	5 V/3 A DC (US/EU standards, CE/FCC/ UL certified)
Dimensions	138 mm (W)×223 mm (D)×50 mm (H)
Weight	680 g
Chassis Material	Aluminum
Silkscreen Color	Black
Power Consumption	15 W

10. HDACC AUDIO PERFORMANCE

Fs = 44.1 to 96 kHz, 20 to 20 kHz BW, 1 kHz test tone, 0 dBFS = +24 dBu (unless noted):	
SNR – A-Weighted, (0 dBFS = +20 to +29 dBu):	109 dB
SNR – Unweighted, (0 dBFS = +20 to +29 dBu):	107 dB
THD+N, 1 kHz at 0 dBFS:	-85 dB, 0.005095%
THD+N, 1 kHz at –1 dBFS:	-87 dB, 0.004849%
THD+N, 1 kHz at –3 dBFS:	-89 dB, 0.004521%
THD+N, 20 to 20 kHz test tone at –3 dBFS:	-89 dB, 0.004521%
Frequency Response at Fs=48 kHz:	± 0.1dB(20 to 20kHz)
	0.2 dB at 20 Hz
	-0.2 dB at 20 kHz
Frequency Response at Fs=96 kHz:	± 0.1dB(20 to 20kHz)
	0.25 dB at 20 Hz
	-0.2 dB at 20 kHz
Crosstalk	-113 dB at 20 kHz
	-118 dB at 1 kHz
	-119 dB at 20 Hz
Interchannel Differential Phase (Stereo Pair):	± 0.1 degrees at 1 kHz - any sample rate
Interchannel Differential Phase (Between DAC1 Units Fs<110):	± 0.1 degrees at 1 kHz - Fs < 110 kHz
Interchannel Differential Phase (Between DAC1 Units Fs>110):	± 0.1 degrees at 1 kHz - Fs > 110 kHz
Delay (Digital Input to Analog Output):	3.909 ms at 44.1 kHz
	3.592 ms at 48 kHz
	1.956 ms at 88.2 kHz
	1.798 ms at 96 kHz
	0.980 ms at 176.4 kHz
	0.900 ms at 192 kHz
Mute on Receive Error:	Yes

Mute on Lock Error:	Yes
Mute on Idle Channel:	No

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